

Lonicera caerulea, L. Shelves at 1230 to 1385 m. (4000 to 4500 ft.), West wall, North Basin.

Diervilla trifida, Moench. With the last; also on the North wall, North Basin.

Campanula rotundifolia, L. Common.

Solidago macrophylla, Pursh. Common.

S. Virgaurea, L., var. *alpina*, Bigelow. Common. There were very diverse forms immature in July. These need careful collecting.

Aster Radula, Ait. North Mt. (*Briggs*); common on the walls of the North Basin to 1385 m. (4500 ft.); Chimney Pond.

A. umbellatus, Mill. North and West walls, North Basin, at 1230 to 1385 m. (4000 to 4500 ft.).

A. acuminatus, Michx. With the last.

Gnaphalium supinum, Villars. Rocks in the Great Basin (*Scribner*); North Mt. (*Briggs*); gravelly bank, head of Saddle Brook.

Arnica Chamissonis, Less. Katahdin, rare (*Goodale*); foot of Eastern Slide (*Scribner*); North Mt. (*Briggs*); shelves at 1230 to 1385 m. (4000 to 4500 ft.), North and West walls, North Basin.

Senecio Balsamitae, Muhl. Depot Pond — first noted by E. D. Merrill.

Prenanthes trifoliolata, Fernald, var. *nana*, n. comb. (*P. alba*, var. *nana*, Bigelow. *P. serpentaria*, var. *nana*, Gray. *Nabalus nanus*, DC.) Common.

P. Boottii, Gray. Higher slopes; mostly on the crest.

EXPLANATION OF PLATE 32. — *Carex katahdinensis*: Fig. 1, portion of plant; fig. 2, scale from staminate spike; fig. 3, scale from pistillate spike; fig. 4, perigynium and scale. *C. conoidea*: Fig. 5, mature inflorescence; fig. 6, scale from staminate spike; fig. 7, perigynium and scale. *C. oligocarpa*: Fig. 8, mature inflorescence; fig. 9, scale from staminate spike; fig. 10, perigynium and scale.

BRYOPHYTES OF MOUNT KATAHDIN.

G. G. KENNEDY and J. F. COLLINS.

THE following preliminary list of the Musci and Hepaticae of Mount Katahdin is based on collections made from July 7–16, 1900. The Hepaticae were determined by Dr. A. W. Evans; the Dicrana by Dr. R. H. True, and the remainder by Dr. G. G. Kennedy, Messrs. J. F. Collins and E. B. Chamberlain.

Not all of the specimens collected have as yet been critically examined, but it is thought best to publish the list with the other papers on the mountain in the present number of RHODORA, and leave for further study the undetermined specimens. The introductory sketch by Dr. Kennedy and the list of species are followed by Mr. Collins' notes on some of the rarer mosses.

INTRODUCTORY SKETCH.

Our path up Mt. Katahdin, after leaving McLeod's camp, soon entered virgin forest where the shade of trees and green carpet of mosses refreshed the eyes weary with gazing on the burnt and fallen timber and rocky wastes of the Wassataquoik valley.

The rain came down with less pelting violence, and as I entered an area of large white cedars (*Arbor-vitae*) I found myself thinking of Richard Spruce and his wanderings in the Amazon valley with its tropical rains. Surely he could not have seen a more abundant moss garden than surrounded us, and we instinctively stopped to gather, or at least inspect, the mosses into which our feet had plunged. But our search was not rewarded by a multiplicity of species. It was all *Hypnum Schreberi*, Willd., *H. Crista-castrensis*, L. and *Hylocomium splendens* (Hedw.) Bry. Eur., with an occasional *Dicranum* on a projecting rock; and during the remainder of our walk to camp we saw practically nothing else. Perhaps the rain veiled our eyes, perhaps our footsteps needed constant attention, but those few mosses and none others were always in evidence. The *Hylocomium splendens* grows only in the woods, but the *Hypnum Schreberi* and *H. Crista-castrensis* are found to the very summit of the mountain, often in masses and often sparingly mixed with Pogonatum and other mosses.

If these *Hypna* were abundant we were equally surprised at the scarcity of tree mosses; in the evening on comparing notes we found that neither of us had observed a moss on a tree, and in our whole stay at camp we found none. At what altitude the *Neckera*, *Leucodon* and *Orthotrichums* vanish we cannot say, but our list shows none collected on the slopes of Katahdin. In the woods for a few miles after leaving the East Branch grow *Neckera pennata*, Hedw., *Leucodon sciuroides*, Schwaeg. and various *Orthotrichums* in as much luxuriance as in other northern forests, but we saw none on the mountain. It is probable that though infrequent they are not wholly wanting, for I found on one of the logs of our cabin a little

bunch of moss consisting of *Ulota crispa*, (L.) Brid., *Ulota crispula*, Bruch. and *Ulota Ludwigii*, (Brid.) Brid, and if these common forest species are there, the others may be confidently expected.

The Alpine region of Katahdin was very inadequately explored by us: its large area of tableland, and its many precipitous slopes and ledges would take more than one summer to investigate, and we may look for interesting discoveries in the future. The Tableland is an Alpine garden much larger than at Mt. Washington and of the same granitic rock formation; the dome of Mt. Washington is probably drier and the rainfall there has a less evident influence on vegetation from sinking deeper in among the rocky boulders and running off sooner from the want of soil to retain it. Mt. Washington has passed the era of slides and falls of masses of rock, while Katahdin is yet subject to both these changes, and is therefore in a transition state as regards the permanence of its present flora or the advent of new species. In fact, to compare small things with great, the change in the moss flora at Blue Hill in the Metropolitan Park Reservation near Boston, as shown in the steep sides of certain new avenues laid out a few years ago and now covered with *Pogonatum tenue*, Michx., *Leptotrichum pallidum*, Hampe and *Dicranella heteromalla*, Schimp. shows that earth slides soon make a resting place for the spores of mosses, where a very wet or a very dry season may make great changes in the abundance of the plants.

As compared with Mt. Mansfield, Katahdin lacks that slightly calcareous soil which gives a special character to the Green Mountain vegetation, and is shown in mosses by the presence of *Gymnostomums*, *Barbularas*, and *Physcomitriums* which with *Blindia*, *Seligeria*, and *Distichium* always seem to me to be planted in just a little limy dust. It is doubtful if these species will ever be found on Katahdin. It is probable that the summits of Mansfield, 4396 feet high, and Katahdin, 5215 feet high, have a larger rainfall than Washington, 6300 feet high; at least the experience of our party of botanists who have explored all three of the mountains would lead us to that conclusion.

LIST OF BRYOPHYTES COLLECTED IN THE BASINS AND ON THE UPPER SLOPES OF KATAHDIN.

A single asterisk (*) indicates species or varieties hitherto unrecorded from Maine, and double asterisks (***) indicate those hitherto unrecorded from New England.

MUSCI.

- * *Amblystegium varium* (Hedw.)
Lindeb.
Andreaea petrophila Ehrh.
Aulacomnium palustre (L.) Schwgr.
(a var. or form)
* *Bryum pallescens* Schleich.
Bryum pseudo-triquetrum (Hedw.)
Schwaegr.
Catharinea angustata Brid.
* * " " *sp*
Ceratodon purpureus (L.) Brid.
* *Conostomum boreale* Swz.
* * *Cynodontium polycarpum stru-*
miferum (W. et M.) Schpr.
Dicranella heteromalla (L.) Schpr.
* *Dicranoweisia crispula* (Hedw.)
Lindb.
Dicranum Bonjeani De Not.
" *congestum* Brid.
* * " *congestum flexicaule* Br.
Eur.
Dicranum elongatum Schwaegr.
* " *fulvellum* (Dicks.) Sm.
" *fuscescens* Turn.
* " *fuscescens Eatoni* R. et C.
Dicranum longifolium Ehrh.
" *undulatum* Ehrh.
Fissidens osmundoides (Swz.) Hedw.
* *Grimmia Doniana* Sm.
Hylocomium splendens (Hedw.) Br.
Eur.
Hylocomium umbratum (Ehrh.) Br.
Eur.
Hypnum Crista-castrensis L.
" *imponens* Hedw.
* " *montanum* Wils. mss.
" *Schreberi* Willd.
" *uncinatum* Hedw.
Leucobryum glaucum (L.) Schpr.
- * *Mielichhoferia nitida elongata*
(Hsch.) Br. Eur.
Mnium affine Bland. (a variety).
" *punctatum* (L.) Hedw.
" *spinulosum* Br. Eur.
Pogonatum alpinum (L.) Roehl.
Pogonatum capillare (Rich.) Brid.
* *Pogonatum urnigerum* (L.) Beau.
Polytrichum commune L.
" *juniperinum* Willd.
" *Ohioense* R. et C.
" *piliferum* Schreb.
" *strictum* Banks.
Pylaisia polyantha (Schreb.) Br.
Eur.
Racomitrium aciculare (L.) Brid.
Racomitrium fasciculare (Schrad.)
Brid.
Racomitrium lanuginosum (Hedw.)
Brid.
Racomitrium sudeticum (Funck) Br.
Eur.
Sphagnum acutifolium Ehrh.
" *papillosum* Lindb.
" *rigidum* (Nees) Schpr.
" *squarrosum* Pers.
* *Tayloria tenuis* (Dicks.) Schpr.
Tetraphis pellucida (L.) Hedw.
* *Tetraplodon angustatus* (L. fil.)
Br. Eur.
* * *Tetradontium Brownianum rig-*
idum (Funck) Jur.
Ulota crispa (L.) Brid.
" *crispula* Bruch.
" *Ludwigii* (Brid.) Brid.
* * *Webera elongata macrocarpa*
(Hsch.) Schpr.
Webera nutans Hedw.

HEPATICAE.

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| <i>Bazzania trilobata</i> (L.) S. F. Gray. | * <i>Lophozia barbata</i> (Schreb.) Dum. |
| <i>Blepharostoma setiforme</i> (Ehrh.)
Lindb. | “ <i>incisa</i> (Schrad.) Dum. |
| <i>Blepharostoma trichophyllum</i> (L.)
Dum. | “ <i>inflata</i> (Hud.) M. A. Howe. |
| <i>Diplophyllia taxifolia</i> (Wahl.) Trev. | * * “ <i>lycopodioides</i> (Wallr.) Schif. |
| * <i>Gymnomitrium concinnatum</i> (Lt.)
Corda. | “ <i>ventricosa</i> (Dicks.) Dum. |
| * <i>Lophozia alpestris</i> (Schleich.)
Evans, N. Comb. (<i>Jungermania alpestris</i> Schleich.) | <i>Marsupella emarginata</i> (Ehrh.)
Dum. |
| “ <i>attenuata</i> (Lindb.) Dum. | * <i>Nardia obovata</i> (Nees) Lindb. |
| | <i>Ptilidium ciliare</i> (L.) Nees. |
| | * <i>Scapania umbrosa</i> (Schrad.) Dum. |
| | “ <i>undulata</i> (L.) Dum. |

NOTES ON THE BRYOPHYTES OF MAINE,— II.

KATAHDIN MOSSES.

J. FRANKLIN COLLINS.

Amblystegium varium (Hedw.) Lindb. Widely distributed in North America, ranging from Newfoundland and New Brunswick to British Columbia and southward, though it seems to have been definitely reported from only four of the New England States,— Vermont, Massachusetts, Rhode Island and Connecticut. It also occurs in Europe, Asia and South America.

Catharinea. A few specimens of a *Catharinea* without fruit. In some of their characteristics these plants agree with Macoun's specimens of *Atrichum leiophyllum* Kindb. distributed in his Canadian Musci, and it seems best to refer them, provisionally, to this species until an opportunity occurs for further and more critical study. They are, with but little doubt, allied to *A. leiophyllum*. No record has been found of any New England *Catharinea* with undifferentiated leaf margins.

Conostomum boreale Swz. has been reported from Newfoundland, Gaspé, White, Adirondack and Rocky Mts., British Columbia and northward. On Katahdin this moss occurs, so far as these collections are concerned, from 4,000 feet upward—mostly above the Tableland.